ABSTRACT

SATELLITE COMMUNICATION METHOD AND APPARATUS

A satellite messaging system has at least one earth station (2) which sends messages to mobile terminals (6) either on a TDM channels (T) or a to-mobile messaging channel M_F, dependent on the length of the message. Messages are formatted into a variable number of frames each containing a variable but equal number of data packets, so as to make maximum use of the capacity of the frames. Messages and signalling information are transmitted by the mobile terminals (6) on a signalling channel (S) comprising frames F comprising both long (DS) and short (SS) slots, the division between such slots being controlled by the earth station (2). The mobile terminals (6) may operate in either an earth station registered mode, in which they tune to the earth station TDM channel (T) when idle, or a network registered mode, in which they tune to a network station TDM channel (NT) when idle. The earth station (2) may operate in a standard traffic mode, in a low traffic mode, in which the network station TDM channel NT and signalling channel NS replace the earth station TDM channel T and signalling channel S, or in a high traffic mode in which the earth station (2) transmits multiple TDM channels (T). The channel spacing between frequency channels used by mobile terminals (6) referenced to the same earth station TDM channel (T) is narrower than that between channels used by mobile terminals (6) referenced to different TDM channels (T). The earth station (2) transmits using a BPSK modulation scheme, while the mobile terminals transmit using a $\pi/2$ BPSK modulation scheme. The earth station (2) stores lists of addresses which are indexed using a short-form addressing scheme, and can be modified by the mobile terminals (6). The mobile terminals (6) can request entry into a sleep mode.

[Fig. 3]